

III. REMARKS

Independent claims 1 and 10 have been amended for clarity. Support for the amendments made to claims 1 and 10 can be found, for example, in claims 2 and 11, and on page 9, line 18 to page 18, line 13 of the originally filed specification. Claims 2 and 11 have been cancelled without prejudice.

Claim 17 has been amended to bring it into conformity with the amended claim 10.

Claims 6 and 16, which depend on claims 1 and 10, respectively, have been amended to add minor changes.

Independent claims 7 and 18 have been amended for clarity. Support for the amendments made to claims 7 and 18 can be found, for example, in original claim 33 and on page 9, line 18 to page 18, line 13 of the originally filed specification.

Claim 33 has been amended to bring into conformity with the amended claim 7.

Independent claims 21 and 25 have been amended for clarity. The subject matter defined by claim 22 has been incorporated into claim 21. The subject matter defined by claim 26 has been incorporated into claim 25. Thus, claims 22 and 26 have been cancelled without prejudice or disclaimer. The amended claims 21 and 25 recite "block processing". The original description discloses WOLA filterbank as an example of an oversampled filterbank (see e.g., page 9, lines 1 to 15). "block processing" in the WOLA filterbank is well known in the art and can be read from the originally filed application.

Claim 23 has been amended to bring it into conformity with the amended claim 21. Claim 27 has been amended to depend on claim 25.

In addition, new claims 36-41 have been added. New claims 36-38 are based on original claims 9, 29 and 30. New claims 39-41 are based on original claims 20, 31 and 32.

The amendments made to the claims are fully supported by the application as originally filed. No new matter has been introduced by the amendments made to the claims.

Claim Objections

The Examiner has stated the claims 9, 20, 29-35 would be allowable if written in independent form including all of the limitations of the base claim and any intervening claims.

As discussed, new claims 36-38 are based on original claims 9, 29 and 30, and new claims 39-41 are based on original claims 20, 31 and 32. Hence, it is respectfully submitted that new claims 36-41 are in allowable state.

Claim Rejections- 35 USC §102

(1) The Examiner has rejected original claims 1-5, 7, 8, 10-13, 15, 17-19, 21, and 22 under 35 U.S.C. 102(b) as being anticipated by Brennan (US 6,236,731).

Claims 1, 7, 10, and 18, and 21 are independent claims.

Claim 1 recites performing a feature extraction from each of the input signal (in a time domain) and performing a feature extraction from the plurality of band signals (in a frequency domain), and determining a shock flag based on each of the input signal and band signal feature extractions. The acoustic shock event is removed based on the shock flags derived from the input signal and the band signals. Claim 10 is a system claim corresponding to claim 1. Claim 7 contains limitations similar to those of claim 1. Claim 18 contains limitations similar to those of claim 10.

Brennan discloses WOLA filterbanks and a signal processor. However, Brennan fails to disclose or suggest a feature extraction from the input signal (in a time domain) to remove an acoustic shock event. Brennan fails to disclose or suggest determining a shock flag based on each of the input signal and band signal feature extractions, and removing the acoustic shock event based on the shock flags derived from the input signal and the band signals, as recited in claims 1 and 7 (claims 10 and 18).

Claim 21 recites processing each sub-band signal to remove a periodic acoustic shock event. Brennan fails to disclose or suggest this feature.

Hence it is respectfully submitted that claims 1, 7, 10, 18, and 21 and their dependent claims are patentable in view of Brennan.

(2) The Examiner has rejected original claims 21 and 22 under 35 U.S.C. 102(b) as being anticipated by Amano et al. (US 5,136,577).

Claim 22 depends on claim 21.

Amano discloses polyphase filterbanks. In the polyphase analysis of Amano (Fig. 7), a stream of input samples is divided into N sub-streams.

By contrast, in the WOLA analysis, windowing, time-shifting and time-folding are done in a block-by-block method. For clarity, claim 21 has been amended to recite "at a weighted overlap-add (WOLA) analysis filterbank, ... implementing block processing to the input signal".

It is well understood by one of ordinary skill in the art that the polyphase filterbanks of Amano and the WOLA filterbanks are completely different. Amano fails to teach the use of WOLA filterbanks. Amano fails to disclose or suggest processing each sub-band signal from the WOLA analysis filterbank to remove a periodic acoustic shock event. Brennan also fails to disclose or suggest removing a periodic acoustic shock event.

Hence it is respectfully submitted that claim 21 and its dependent claims are patentable in view of any of the cited references.

Claim Rejections- 35 USC §103

(3) The Examiner has rejected original claims 6, 14 and 16 under 35 U.S.C. 102(b) as being unpatentable over Brennan in view of Southward et al. (US 5,745,580).

Claim 6 depends on claim 1. Claims 14 and 16 depend on claim 10. As discussed, Brennan fails to disclose or suggest the subject matter defined by claims 1 and 10. Southward et al. cannot add any teaching to Brennan to render claims 1 and 10 unpatentable.

Hence it is respectfully submitted claims 6, 14 and 16 are patentable in view of the cited references.

(4) The Examiner has rejected original claims 23-24 under 35 U.S.C. 103(a) as being unpatentable over Amano et al.

Claims 23 and 24 depend on claim 21. As discussed, none of Amano and Brennan taken alone or in combination thereof suggests or teaches the subject matter defined by claim 21.

Hence it is respectfully submitted claims 23-24 are patentable in view of any of the cited references.

(5) The Examiner has rejected original claims 25-28 under 35 U.S.C. 103(a) as being unpatentable over Amano et al. in view of Brennan.

Claim 25 is an independent claim, and contains limitations similar to those of claim 21. Claims 26-28 depend on claim 25.

As discussed, Amano is completely different from the WOLA filterbank structure. Amano fails to disclose or suggest processing each sub-band signal from the WOLA analysis filterbank to remove a periodic acoustic shock event. Brennan also fails to disclose or suggest removing a periodic acoustic shock event. None of Amano and Brennan taken alone or in combination thereof suggests or teaches the subject matter defined by claim 25.

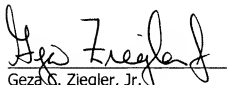
Hence it is respectfully submitted claims 25-28 are patentable in view of any of the cited references.

It is respectfully submitted that independent claims 1, 7, 10, 18, 21, and 25 and their dependent claims are patentable in view of the cited reference. Applicant respectfully requests reconsideration and withdrawal of the rejections.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

The Commissioner is hereby authorized to charge \$60 for a one-month extension of time, \$50 for two additional claims and \$210 for two additional independent claims (all fees are at the small entity rate), as well as any other fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,



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Date

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